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ABSTRACT

This guide provides the basic foundation to develop a one-semester course based on the cluster concept, graphic communications. One of a set of six guides for an industrial arts curriculum at the junior high school level, it suggests exploratory experiences designed to (1) develop an awareness and understanding of the drafting and graphic arts industries, and (2) develop an insight into economic, social, and recreational aspects of visual communications in a changing society. Following an introduction covering rationale, cluster outlines and objectives, and cluster taxonomic structure, nine units are presented: communications, freehand, instruments, design, image generation, preproduction, production, bindery, and careers. Each unit includes unit objectives, student competencies and related student activities, and where applicable, illustrations and diagrams. A bibliography of films and other materials, and a listing of resources in graphic communications are appended. (SH)

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ED147461

INDUSTRIAL ARTS

GRAPHIC COMMUNICATIONS

Curriculum Guide

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
NATIONAL INSTITUTE OF EDUCATION

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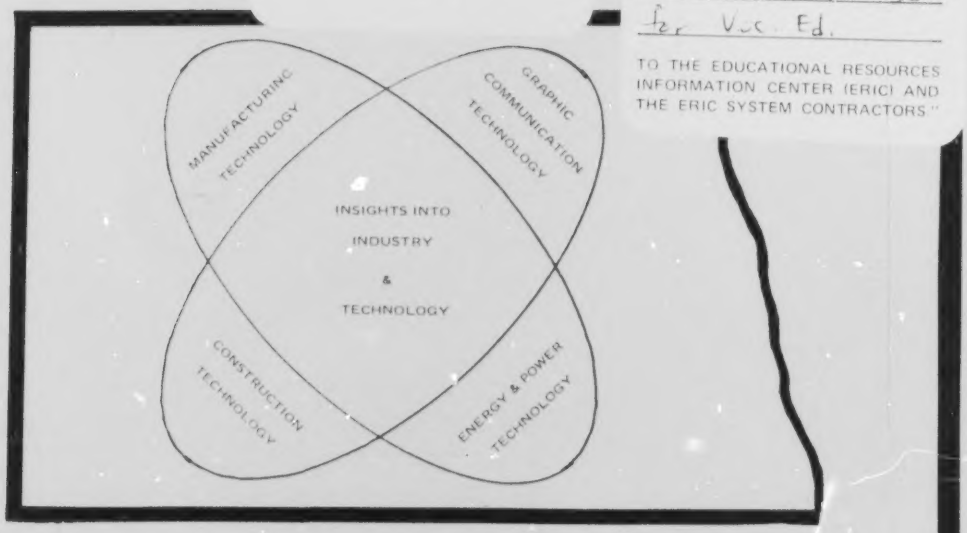

NORTH DAKOTA

NORTH DAKOTA STATE BOARD FOR VOCATIONAL EDUCATION
Bismarck, North Dakota

CE 012 457

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GRAPHIC COMMUNICATIONS

RATIONALE: Graphic Communications is the process of transmitting visually, ideas, thoughts, or concepts.

A study of Graphic Communications provides an exploratory experience that develops an awareness and understanding of the drafting and graphic arts industries. It provides opportunities for all students to develop an insight into economic, social and recreational aspects of visual communications in a changing society.

Graphic Communications involves students in meaningful class and instructional activities and develop self-direction, continuous learning, and creativity.

OBJECTIVES: Primary objectives of Graphic Communications are to assist the student to:

1. Develop an insight and understanding of the drafting and graphic arts industry and technology and its place in our society.
2. Develop problem solving and creative abilities using freehand and instrument drafting processes.
3. Discover and develop an insight and understanding of the graphic arts industry through the study of design, image generation, pre-production, production, and bindery.
4. Develop career awareness, exploratory experiences and information dealing with the Graphic Communications industry.

5. Become an effective consumer and/or producer in a Graphic Communications society.

GRAPHIC COMMUNICATIONS

GUIDELINES FOR IMPLEMENTATION

This instructional guide is designed to assist teachers, supervisors, administrators, and teacher-educators as they organize an industrial course in the Graphic Communications cluster in the State of North Dakota. The implementation of the cluster approach is going to require the cooperation of all with an interest in quality education in our state, because it is going to mean changing from traditional habits and philosophies to thinking of industrial arts as total concept.

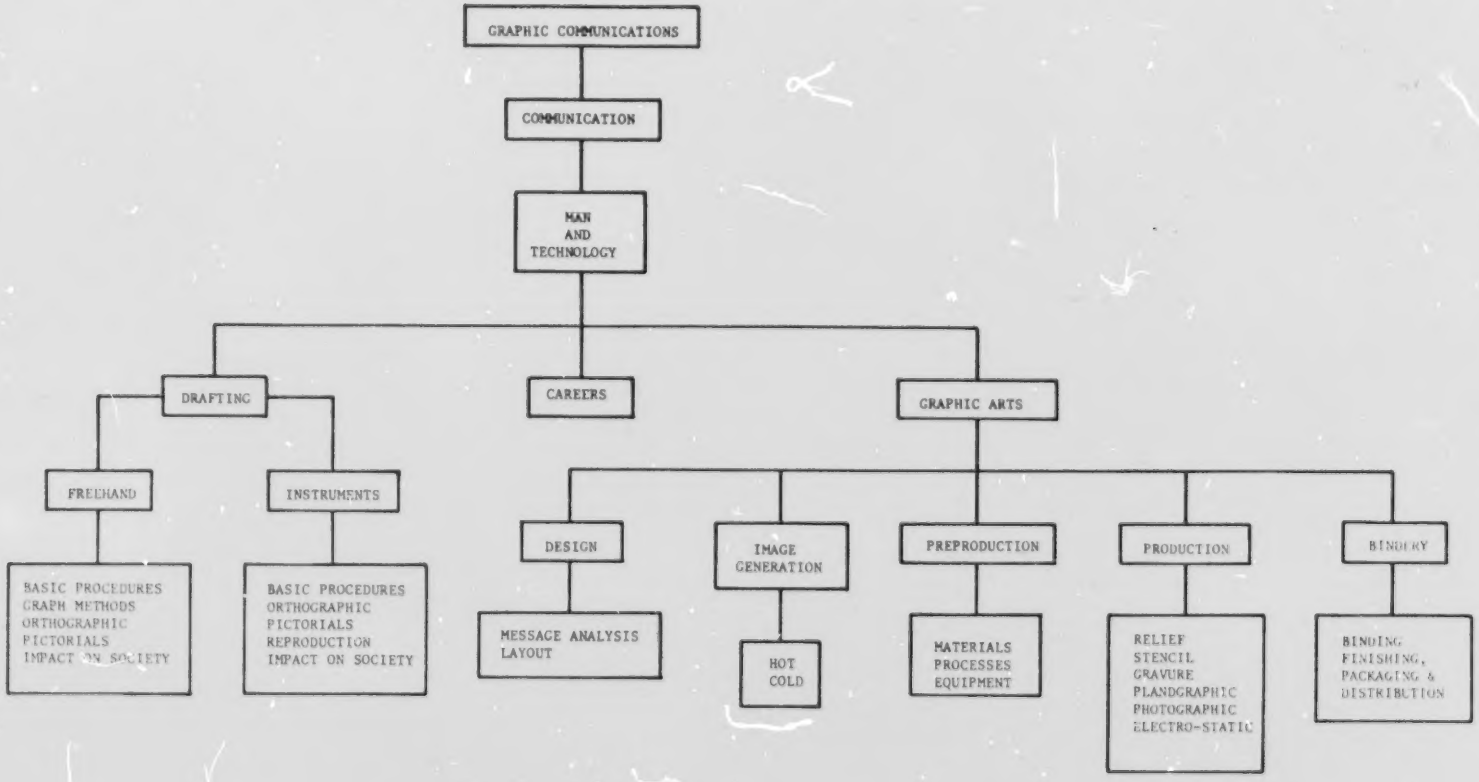
The Graphic Communications cluster of drafting and graphic arts is presented here as a suggested guide for this new approach to industrial arts in North Dakota. The committee that developed this guide would recommend that the teacher not dispense with the project in his instruction, but instead, rethinks the use of this project as a vehicle to develop the basic concepts. For example, the design of a project, the images generated, the pre-production exercises, the production exercise, and binding, it can and should probably be carried out with a single project.

For those not familiar with Graphic Communications, the committee has provided suggested procedures, projects, techniques, and audio-visual aids to assist in setting up a program which corresponds to the students needs. The committee is fully aware of the fact that the school day is limited in time and the vast amount of available material. We know, however, that the professional teachers in the field will choose those concepts most applicable to his or her school and at the same

time apply the concepts of Graphic Communications to the total field of Industrial arts.

The recommended text indicated in this guide is only recommended. The individual teacher in the area may select a text that suits his or her setting. Workbook will accompany selected text.

GRAPHIC COMMUNICATIONS
TAXONOMETRIC STRUCTURE



GRAPHIC COMMUNICATION

BODY OF KNOWLEDGE

1.00 COMMUNICATION

- 1.10 Communication and Man
  - 1.11 Evolution of communication
  - 1.12 Communication model
    - 1.121 The model
  - 1.13 Social impacts of communication
  - 1.14 Cultural impacts of communication
- 1.20 Communication and Technology
  - 1.21 Origins of the graphic reproduction industry
  - 1.22 The middle ages and industrial revolution
  - 1.23 Graphics to the present
  - 1.24 The future of graphic communications

2.00 FREEHAND

- 2.10 Basic Procedures
  - 2.11 Tools
    - 2.111 Pencils
      - 2.1111 Mechanical
      - 2.1112 Wood
    - 2.112 Erasers
      - 2.1121 Artist
      - 2.1122 Ruby
      - 2.1123 Electric
    - 2.113 Paper
      - 2.1131 Tracing
      - 2.1132 Vellum
      - 2.1133 Tracing cloth
      - 2.1134 Glass cloth
      - 2.1135 Film
  - 2.12 Lines
    - 2.121 Alphabet of lines
    - 2.122 Construction
      - 2.1221 Straight lines
      - 2.1222 Circles and arcs
      - 2.1223 Curves
  - 2.13 Lettering
    - 2.131 Gothic
      - 2.1311 Vertical
      - 2.1312 Inclined
    - 2.132 Others

2.20 Graph Methods
- 2.21 Enlarged
- 2.22 Reduced
- 2.23 Copy

2.30 Orthographic
- 2.31 Thumbnail
- 2.32 One view
- 2.33 Multiview
- 2.34 Working

2.40 Pictorials
- 2.41 Isometric
  - 2.411 First position
  - 2.412 Second position
  - 2.413 Reversed
  - 2.414 Nonisometric lines
- 2.42 Oblique
  - 2.421 Cabinet
  - 2.422 Cavelier
- 2.43 Perspective
  - 2.431 1-point
  - 2.432 2-point
  - 2.433 3-point

2.50 Impact on Society
- 2.51 Artistic
  - 2.511 Artist
  - 2.512 Advertising
  - 2.513 Fashion
  - 2.514 Cartoonist
- 2.52 Technical
  - 2.521 Designer
  - 2.522 Engineer
- 2.53 Recreational
  - 2.531 Individual

3.00 INSTRUMENT

3.10 Basic Procedures
- 3.11 Tools and equipment
- 3.12 Techniques
  - 3.121 Uses
  - 3.122 Safety
- 3.13 Alphabet of lines
- 3.14 Geometric construction
- 3.15 Lettering

3.20 Orthographic
- 3.21 Theory of shape description
- 3.22 Dimensioning
  - 3.221 Aligned
  - 3.222 Unidirectional

- 3.23 Scale drawing
  - 3.231 Metric
  - 3.232 Architect
  - 3.233 Engineering
  - 3.234 Civil
- 3.24 Types
  - 3.241 Auxiliary
  - 3.242 Detail
  - 3.243 Assembly
  - 3.244 Pattern

- 3.30 Pictorial
  - 3.31 Isometric
    - 3.311 First position
    - 3.312 Second position
    - 3.313 Reversed
    - 3.314 Nonisometric
  - 3.32 Oblique
    - 3.321 Cavalier
    - 3.322 Cabinet
  - 3.33 Perspective
    - 3.331 1-point
    - 3.332 2-point
    - 3.333 3-point
  - 3.34 Presentation
    - 3.341 Assembly
    - 3.342 Illustrative

- 3.40 Reproduction
  - 3.41 Blueprint
  - 3.42 Zerox
  - 3.43 Microfilm
  - 3.44 Computer
  - 3.45 Photographic

- 3.50 Industrial impact on society
  - 3.51 Areospace
  - 3.52 Architectural
  - 3.53 Charts and graphs
  - 3.54 Electrical
  - 3.55 Engineering
  - 3.56 Map
  - 3.57 Metal

4.00 DESIGN

- 4.10 Message Analysis
  - 4.11 What is the message?
    - 4.111 Content
    - 4.112 Cost
    - 4.113 Quantity
    - 4.114 Quality

4.12 Why send a message?
4.121 Stimulation
4.122 New knowledge
4.123 Will it result in action?
4.13 To who--what class of people?
4.14 When
4.15 How
4.16 Where
4.161 In a building
4.162 Near a building
4.163 On a roadside
4.164 On television or radio

4.20 Layout
4.21 Topography
4.211 Type
4.212 Decoration
4.213 Illustration
4.214 Printer's rule of measure
4.22 Drafting the layout
4.221 Thumbnail sketches
4.2211 Quick sketches
4.2212 Quick lettering
4.2213 Smaller size preparation
4.222 Rough layout
4.2221 Select the best thumbnail sketch
4.2222 Refine the sketch
4.2223 Prepare a more accurate size
4.2224 Locate type in proper place
4.2225 Layout other elements in areas
4.2226 Detail all pictures, diagrams, illustrations
4.223 Comprehensive layout
4.2231 Extreme accuracy
4.2232 True representation
4.2233 Use basic drafting equipment
4.2234 Use basic artists tools
4.224 Mechanical layout--final paste-up

5.00 IMAGE GENERATION

5.10 Hot Type
5.11 Metal type
5.111 History of movable type
5.1111 Gutenberg
5.112 California job case
5.113 Type faces
5.1131 Roman
5.1132 Gothic
5.1133 Square serif
5.1134 Text
5.1135 Cursive
5.1136 Novelty
5.114 Type composition
5.1141 Properties
5.115 Type sizes

6.32 Presses
6.321 Operations
6.3211 Placing plate on the press
6.3212 Setting guides for paper
6.3213 Setting delivery and rolls
6.3214 Mix fountain solution
6.3215 Wet plate
6.3216 Turn on water
6.3217 Turn on ink rollers
6.3218 Make trial run
6.3219 Make adjustments

7.00 PRODUCTION

7.10 Relief
7.11 Letterpress
7.111 Preparation of press
7.1111 Oiling the plate
7.1112 Checking grippers
7.1113 Prepare packaging
7.1114 Position of guidepins
7.1115 Making overlay
7.1116 Inking the press
7.1117 Trial run
7.1118 Adjustment
7.1119 Final run
7.1120 Clean up

7.20 Stencil
7.21 Paper
7.211 Equipment
7.22 Handcut
7.221 Equipment
7.2211 Film
7.2212 Exacto knife
7.2213 Block out
7.2214 Screen
7.2215 Frame
7.2217 Blotter
7.2218 Squeegee
7.222 Process
7.2221 Position film on screen
7.2222 Blockout
7.2223 Remove acetate
7.2224 Register paper
7.2225 Make trial run
7.2226 Adjust
7.2227 Final run
7.2228 Clean up
7.23 Photographic
7.231 Equipment
7.2311 Camera
7.2312 Ortho film
7.2313 Chemicals

5.12 Wood type
5.13 Relief form to film conversion
5.131 Proofs

5.20 Cold type
5.21 Strike on
5.211 Typewriter
5.212 Stamp
5.22 Clip art and press on letters
5.221 Direct transfer letters
5.23 Illustrations
5.231 Drawings, sketches
5.24 Photo composition
5.241 Varitype
5.25 Continuous type photography
5.251 Camera techniques
5.26 Mechanical (relief)
5.261 Varigraph

6.00 PREPRODUCTION

6.10 Material
6.11 Inks
6.111 Properties
6.12 Paper
6.121 Surface
6.122 Texture
6.123 Rag content
6.124 Finishes
6.125 Weights

6.20 Process
6.21 Proofreading
6.211 Symbols
6.22 Film types
6.221 Ortho film
6.2211 Chemicals
6.2212 Lighting
6.2213 Development
6.222 Panchromatic
6.2221 Chemicals
6.2222 Lighting
6.2223 Development
6.23 Stripping
6.231 Equipment
6.2311 Light table
6.2312 Exacto knives
6.2313 Golden rod
6.2314 Litho type
6.232 Care of flat
6.24 Plate making
6.241 Plate
6.242 Exposing unit
6.243 Development
6.244 Care of plate

7.2314 Screen
7.2315 Exposing unit
7.2316 Ink
7.232 Process
7.2321 See information sheet

7.50 Continuous Tone Photograph
7.51 Black and white
7.511 Contact printing
7.5111 Equipment
7.5112 Chemicals
7.51121 See information sheet
7.512 Enlarging
7.5121 Equipment
7.5122 Materials
7.5123 Chemicals
7.51131 See information sheet
7.52 Color
7.521 Equipment
7.522 Chemicals
7.523 Materials
7.5231 See information sheet

7.60 Electro-static

8.00 BINDERY

8.10 Binding
8.11 Folding
8.12 Cutting
8.212 Calculation
8.122 Parts of a paper cutter
8.13 Drilling
8.14 Gathering
8.15 Methods
8.151 Saddle-wire stitch
8.152 Side-wire stitch
8.153 Sewn soft cover
8.154 Binding post
8.155 Ring binder
8.156 Plastic cylinder
8.157 Perfect adhesive binding

8.20 Finishing Packaging and Distribution
8.21 Finishing a book
8.22 Packaging
8.221 Mail magazine packaging
8.222 Automatic label applicator
8.23 From bindery to customer

9.00 CAREERS

9.10 Classification
9.11 Classifications
9.111 Management

9.112 Labor
- 9.1121 Design
- 9.1122 Sales
- 9.1123 Research and development
- 9.1124 Service personnel
- 9.1125 Technical personnel

9.20 Career Opportunities in the Industry
- 9.21 Preparation
- 9.22 Economics
- 9.23 The future

GRAPHIC COMMUNICATIONS

MAJOR UNITS

1.00	COMMUNICATIONS	5 Days
2.00	FREEHAND	15 Days
3.00	INSTRUMENTS	15 Days
4.00	DESIGN	5 Days
5.00	IMAGE GENERATION	5 Days
6.00	PREPRODUCTION	10 Days
7.00	PRODUCTION	25 Days
8.00	BINDERY	5 Days
9.00	CAREERS	5 Days

UNIT I

1.00 COMMUNICATION 5 Days

OBJECTIVE: To develop an understanding of how man began and has advanced the process of transmitting visually the ideas, thoughts, and concepts of one person to another.

UNIT OUTLINE

1.10 Communication and Man

1.11 Evolution of communication

1.12 Communication model

1.121 The model

1.13 Social impacts of communication

1.14 Cultural impacts of communication

1.20 Communication and Technology

1.21 Origins of the graphic reproduction industry

1.22 The middle ages and industrial revolution

1.23 Graphics to the present

1.24 The future of graphic communications

TEXT: Dennis, Ervin and Jenkins, John D., COMPREHENSIVE GRAPHIC ARTS, Howard W. Sams & Co., Inc., Indianapolis, Indiana, 1974. Chapters 1--9.

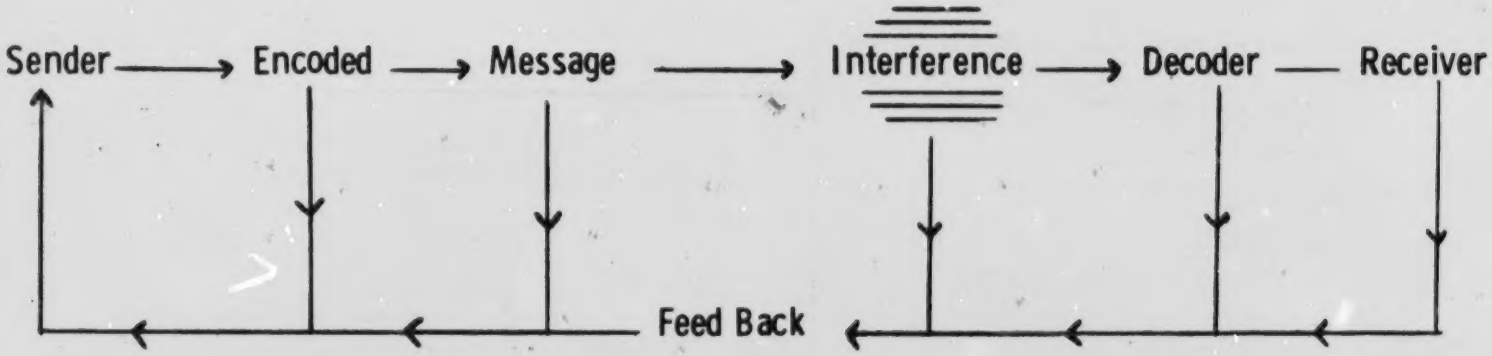
REFERENCES: Broekhuizen, Richard J., GRAPHIC COMMUNICATIONS, McKnight and McKnight Publishing Co., Bloomington, Illinois, 1973. (Section 1).

Turnbull, Arthur T. and Baird, Russell N., THE GRAPHICS OF COMMUNICATION. Holt, Rinehart and Winston, Inc., New York New york, 1968. Chapters 1--3.

UNIT NO. I	SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
1.00	COMMUNICATIONS THE STUDENT WILL BE ABLE TO:	
1.10	A. Describe and compare the advancement of technology and communication.	A1. Construct and display methods of communication. Example: telegraph, tin can and string; C-B radio, fiber optics, drums, etc.
	B. Use properly the nomenclature associated with graphic communications.	B1. Construct the origins of alphabets. Example: chart.
	C. Demonstrate effective means of conveying an idea using presentation materials.	C1. Construct communications model in classroom. Example: see transparency.
	D. Apply the theories of visual organization.	
1.20	A. Demonstrate the interrelationship of drafting and graphic arts as used in industry.	A1. Discuss the future of communications. Example: light transmission, laser, satellite.

1.2

COMMUNICATION MODEL



1.3

UNIT II

2.00 FREEHAND 15 Days

OBJECTIVE: To develop the ability to construct freehand drawings, to develop insights and understanding of sketching as it applies to industry and society.

UNIT OUTLINE

2.10 Basic Procedures

2.11 Tools

2.111 Pencils

2.1111 Mechanical

2.1112 Wood

2.112 Erasers

2.1121 Artist

2.1122 Ruby

2.1123 Electric

2.113 Paper

2.1131 Tracing

2.1132 Vellum

2.1133 Tracing cloth

2.1134 Glass cloth

2.1135 Film

2.12 Lines

2.121 Alphabet of lines

2.122 Construction

2.1221 Straight lines

2.1222 Circles and arcs

2.1223 Curves

2.13 Lettering

2.131 Gothic

2.1311 Vertical

2.1312 Inclined

2.132 Others

2.20 Graph Methods

2.21 Enlarged

2.22 Reduced

2.23 Copy

2.30 Orthographic

2.31 Thumbnail

2.32 One view

2.33 Multiview

2.34 Working drawings

2.40 Pictorials

2.41 Isometric

2.411 First position

2.412 Second position

2.413 Reversed

2.414 Nonisometric lines

2.42 Oblique

2.421 Cabinet

2.422 Cavelier

2.43 Perspective

2.431 1-point

2.432 2-point

2.433 3-point

2.50 Impact on Society

2.51 Artistic

2.511 Artist

2.512 Advertising

2.513 Fashion

2.514 Cartoonist

2.52 Technical

2.521 Designer

2.522 Engineer

2.53 Recreational

2.531 Individual

TEXT: Walker, John R., EXPLORING DRAFTING, The Goodheart Wilcox Co., Inc., Homewood, Illinois, 1972. Chapters 1, 2, 6, 7, 11 & 26.

REFERENCES: Brown, Walter C., DRAFTING FOR INDUSTRY, The Goodheart Wilcox Co., Inc., Homewood, Illinois, 1974. Chapters 1, 3, 4, & 11.

French, Thomas E. and Svensen, Carl L., MECHANICAL DRAWING, Webster Division, McGraw-Hill Book Company, New York, New York, 1968. Chapters 3, 6, & 14.

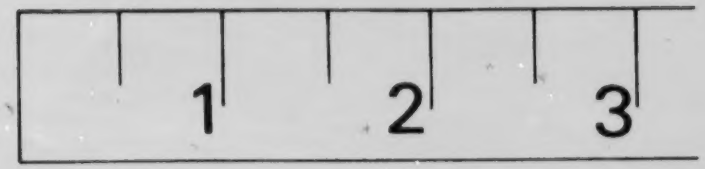
Fuglsby, Glen O., McGee, R. A. and Sturtevant, W. W., GENERAL MECHANICAL DRAWING, The Bruce Publishing Company, Milwaukee, Wisconsin, 1963. Lessons 8--14.

UNIT NO. II	SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
2.00	FREEHAND THE STUDENT WILL BE ABLE TO:	
2.10	A. Draw a freehand sketch using proper sketching techniques to depict an idea.	A1. Produce plates demonstrating typical lines and letters. Example: refer to workbook accompanying text. A2. Reproduce a drawing by the Graph Method.
2.30	A. Describe the merits of the common types of pictorial representation.	A1. Produce pictorial and orthographic drawings.
2.50	A. Discuss how freehand drawing has an artistic, technical and recreational effect on society.	A1. Give reports (oral) on influential draftsmen and designers. Example: refer to Occupational Outlook Handbook, H.E.W.

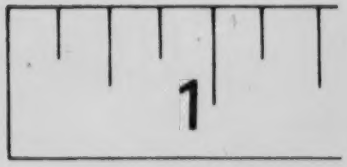
2.4

Graduations on a Rule

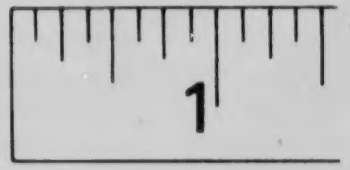
Halves



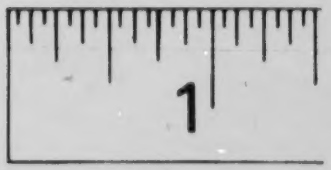
Quarters



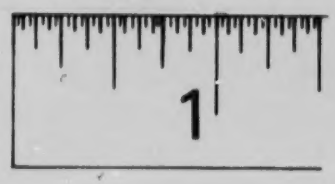
Eighths

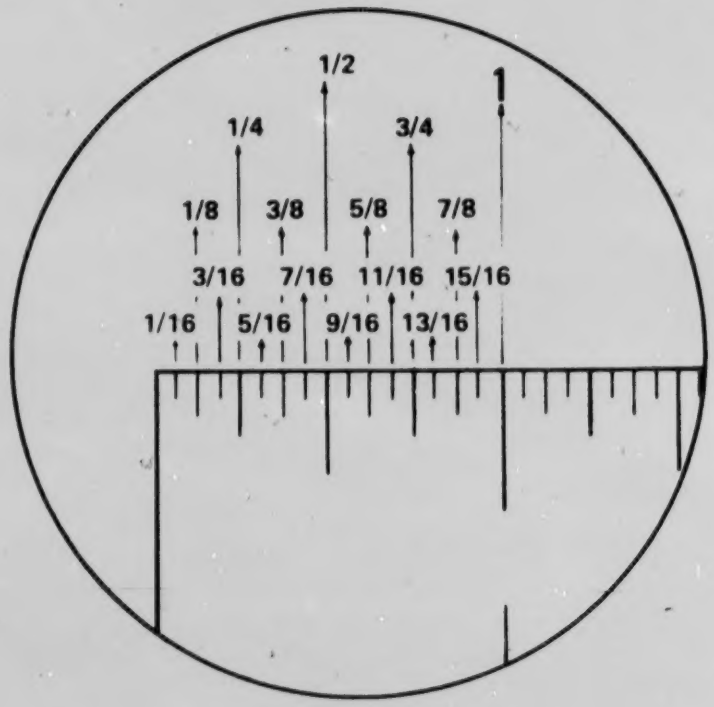


Sixteenths



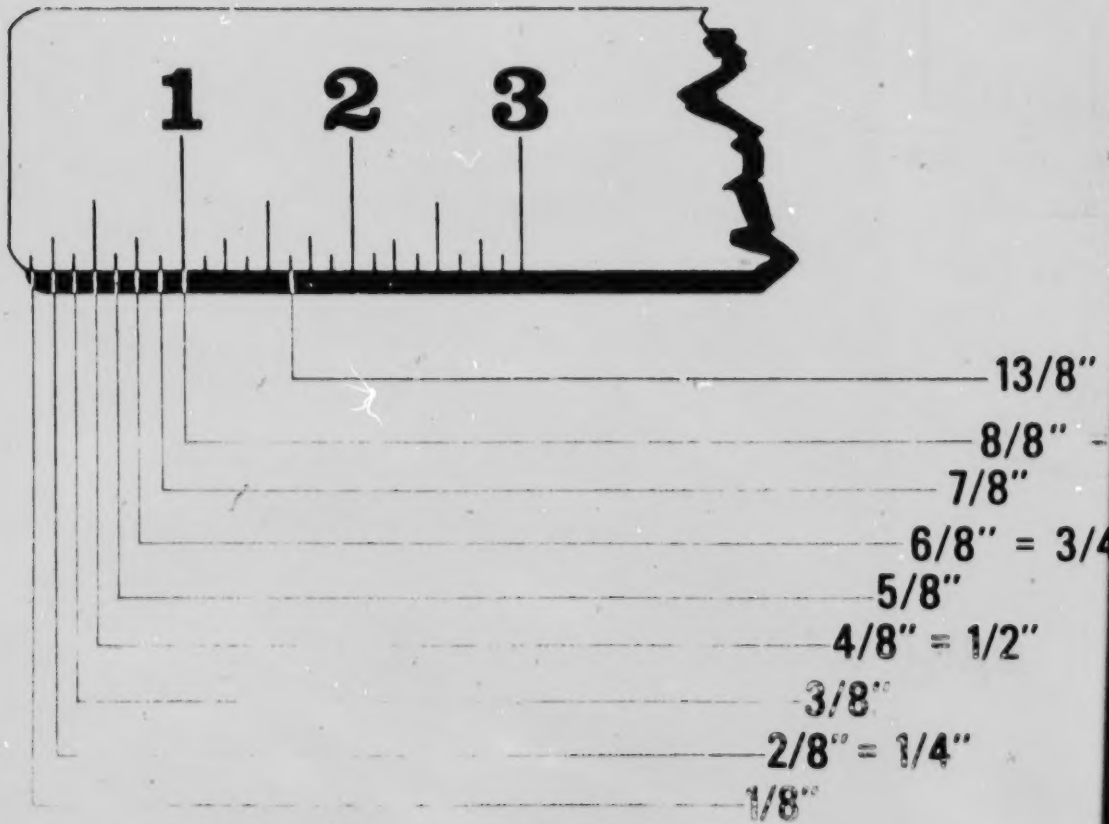
Thirty-Seconds



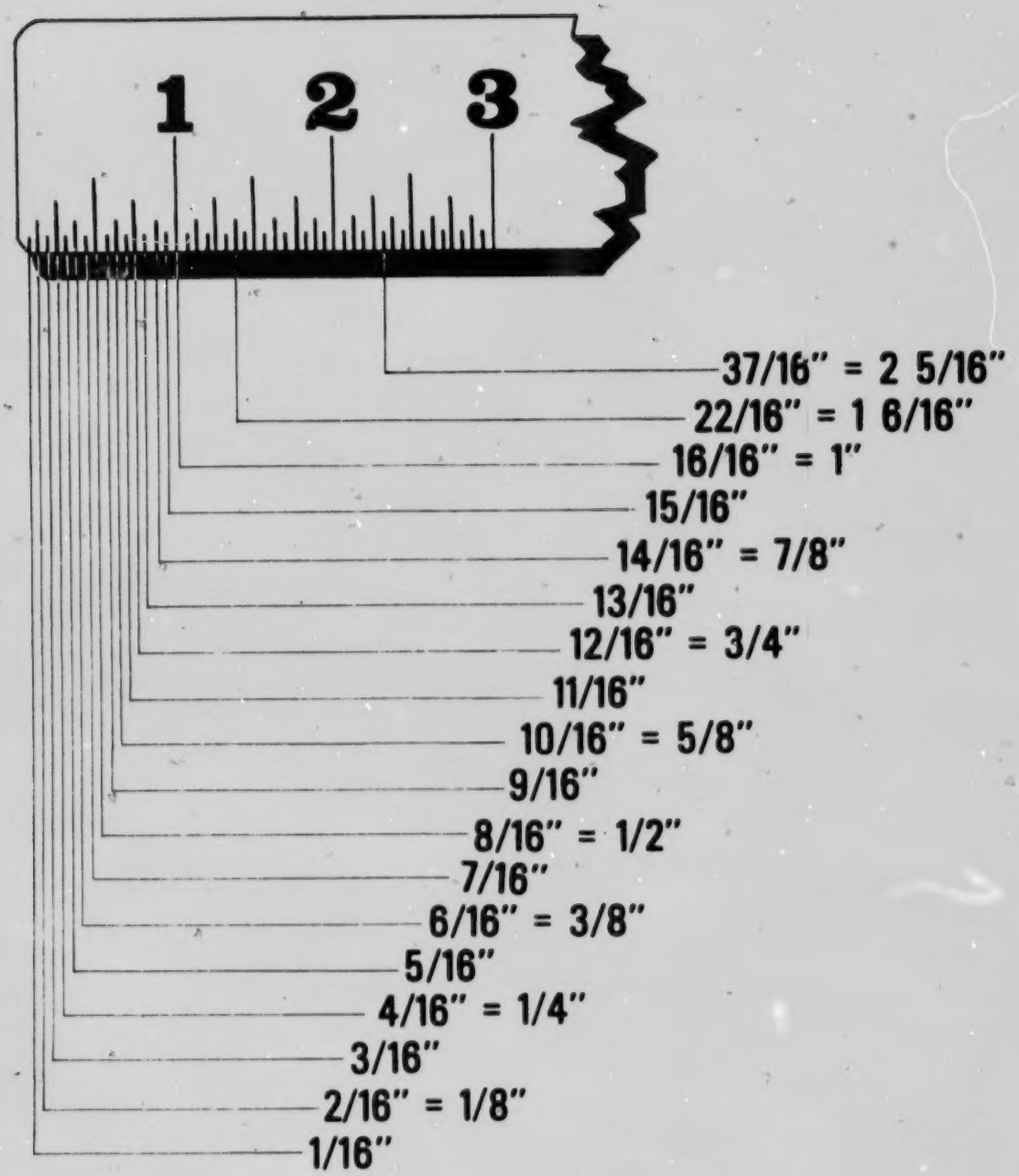


Graduations Applied to a Rule

Reading the Eighths Rule



Reading the Sixteenths Rule



VISUAL AIDS

FILMS: Northwestern Bell, Free Films
Epko, Inc.
P. O. Box 1230
631 N. P. Avenue
Fargo, Inc.
701-235-1949

Modern Talking Picture Service, Inc.
2323 New Hyde Park Road
New Hyde Park, NY 11040

FILMSTRIPS: McGraw Hill Book Co.

- Scales
- Sectional views
- Auxiliary views & related construction
- Isometric drawing
- Freehand lettering
- Developments
- Orthographic drawing Parts 1 & 2
- Dimensioning Parts 1 & 2
- Bowcompasses
- Intersections

Learning Arts
P. O. Box 917
Wichita, KS 67201

- Drafting & blueprint reading
- Drafting techniques
- Mechanical drawing filmstrip or super 8

Double Day Multimedia
P. O. Box 11607
Santa Anna, CA 92705

- Drafting series I and II
- Architectural Drafting

H. Wilson Corp.
555 West Taft Drive
South Holland, IL 60473

- Wilson Education Recordings Communications

TRANSPARANCIES: Learning Aids
P. O. Box 917
Wichita, KS 67201

- Mechanical drawing
- Technical drawing and design

Visual Products Division
3M Center
St. Paul, MN 55101

DCA Educational Products
424 Valley Road
Warrington, PA 18976

UNIT III

3.00 INSTRUMENT 15 Days

OBJECTIVE: To develop in the student the ability to construct drawings through the use of mechanical equipment and processes. To develop insights and understandings of mechanical drawings as it applies to industry and society.

UNIT OUTLINE

3.10 Basic Procedures

- 3.11 Tools and equipment
- 3.12 Techniques
  - 3.121 Uses
  - 3.122 Safety
- 3.13 Alphabet of lines
- 3.14 Geometric construction
- 3.15 Lettering

3.20 Orthographic

- 3.21 Theory of shape description
- 3.22 Dimensioning
  - 3.221 Aligned
  - 3.222 Unidirectional
- 3.23 Scale drawing
  - 3.231 Metric
  - 3.232 Architect
  - 3.233 Engineering
  - 3.234 Civil

3.24 Types

3.241 Auxiliary

3.242 Detail

3.243 Assembly

3.244 Pattern

3.30 Pictorial

3.31 Isometric

3.311 First position

3.312 Second position

3.313 Reversed

3.314 Nonisometric

3.32 Oblique

3.321 Cavalier

3.322 Cabinet

3.33 Perspective

3.331 1 point

3.332 2 point

3.333 3 point

3.34 Presentation

3.341 Assembly

3.342 Illustrative

3.40 Reproduction

3.41 Blueprint

3.42 Zerox

3.43 Microfilm

3.44 Computer

3.45 Photographic

3.50 Industrial Impact on Society

3.51 Areospace

3.52 Architectural

3.53 Charts and graphs

3.54 Electrical

3.55 Engineering

3.56 Map

3.57 Metal

TEXT: Walker, John R., EXPLORING DRAFTING, The Goodheart Wilcox Co., Inc., Homewood, Illinois, 1972. Chapters 1, 3, 4, 5, 6, 7, 11, & 26.

REFERENCES: Brown, Walter C., DRAFTING FOR INDUSTRY, The Goodheart Wilcox Co., Inc., Homewood Illinois, 1974. Chapters 1, 2, 5, 7, 8, 10, & 11.

French, Thomas E. and Svensen, Carl L., MECHANICAL DRAWING, Webster Division, McGraw-Hill Book Company, New York, New York, 1963. Chapters 2, 3, 4, 8, 13, & 14.

Fuglsby, Glen O., McGee, R. A. and Sturtevant, W. W., GENERAL MECHANICAL DRAWING, The Bruce Publishing Company, Milwaukee, Wisconsin, 1973. Lessons 1, 2, 5, 8, 9, 10, 14, 21, 22, & 27.

UNIT NO. III	SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
3.00	INSTRUMENTS THE STUDENT WILL BE ABLE TO:	
3.10	A. Interpret and use standardized drafting symbols and procedures when they are presented in the form of a drawing.	A1. Identify drawings used by various industries. Example: blueprinting, computer.
3.20- -3.30	A. Perform orthographic and pictorial drawings.	A1. Student will produce production drawings. Example: working drawings of projects.
3.40	A. Demonstrate drafting reproductions.	A1. Identify reproductions produced by various processes. Example: blueprinting, xerox.
3.50	A. Identify career opportunities relating to the drafting industry.	

3.4

UNIT IV

4.00 DESIGN 5 Days

OBJECTIVE: To develop in the student the ability to analyze a message as to the what, why, whom, where, when, and how of producing layouts using typography and drafting principles.

UNIT OUTLINE

4.10 Message Analysis

4.11 What is the message?

4.111 Content

4.112 Cost

4.113 Quantity

4.114 Quality

4.12 Why send a message?

4.121 Stimulation

4.122 New knowledge

4.123 Will it result in action?

4.13 To who--what class of people?

4.14 When

4.15 How

4.16 Where

4.161 In a building

4.162 Near a building

4.163 On a roadside

4.164 On television or radio

4.20 Layout

4.21 Topography

4.211 Type

4.212 Decoration

4.213 Illustration

4.214 Printer's rule of measure

4.22 Drafting the layout

4.221 Thumbnail sketches

4.2211 Quick sketches

4.2212 Quick lettering

4.2213 Smaller size preparation

4.222 Rough layout

4.2221 Select the best thumbnail sketch

4.2222 Refine the sketch

4.2223 Prepare a more accurate size

4.2224 Locate type in proper place

4.2225 Layout other elements in areas

4.2226 Detail all pictures, diagrams, illustrations

4.223 Comprehensive layout

4.2231 Extreme accuracy needed

4.2232 True representation

4.2233 Use basic drafting equipment

4.2234 Use basic artists tools

4.224 Mechanical layout--final paste-up

TEXT: Jenkins & Dennis, COMPREHENSIVE GRAPHIC ARTS, 1st Ed., Howard W. Sams, Indianapolis, Indiana, 1974. Chapters 22--26.

REFERENCES: Broekhuizen, Richard J., GRAPHIC COMMUNICATIONS, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1973. Chapters 2 & 3.

Karch, Randolph, BASIC GRAPHIC ARTS PROCEDURES, 4th Ed., American Technical Society, Chicago, Illinois, 1970. Chapter 3.

Polk, Ralph W. and Edwin, THE PRACTICE OF PRINTING, Chas. A. Bennet Co., Inc., Peoria, Illinois, 1964. Chapter 14.

Turnbull, Arthur T. and Baird, Russell N., THE GRAPHICS OF COMMUNICATIONS, Holt, Rinehart and Winston, Inc., New York, New York, 1968. Chapters 4, 10, & 15.

UNIT NO. IV	SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
4.00	DESIGN THE STUDENT WILL BE ABLE TO:	
4.10	A. Discuss the merits and weaknesses of an industrial design.	A1. "Telephone Game"--demonstrate message analysis. A2. Students will bring in advertisements to be analyzed. Example: Advertisement out of newspaper.
4.20	A. Compare the merits and weaknesses of numerous types of composition. B. Apply the principles of design to a given problem.	A1. Students bring in samples of type styles. Example: label from bottles, cans, or newspapers. B1. Students will produce a thumbnail, rough, comprehensive and mechanical sketches of a product. Example: sketch may be used throughout the drafting and graphic arts sections.

4.4

UNIT V

5.00 IMAGE GENERATION 5 Days

OBJECTIVE: At the end of this unit, the student will be able to provide information and have had experiences in hot and cold image generation and their application to the graphic arts procedures.

UNIT OUTLINE

5.10 Hot Type

5.11 Metal type

5.111 History of movable type

5.1111 Gutenberg

5.112 California job case

5.113 Type faces

5.1131 Roman

5.1132 Gothic

5.1133 Square serif

5.1134 Text

5.1135 Cursive

5.1136 Novelty

5.114 Type composition

5.1141 Properties

5.115 Type sizes

5.12 Wood type

5.13 Relief form to film conversion

5.131 Proofs

5.20 Cold Type

5.21 Strike on

5.211 Typewriter

5.212 Stamp

5.22 Clip art and press on letters

5.221 Direct transfer letters

5.23 Illustrations

5.231 Drawings, sketches

5.24 Photo composition

5.241 Varitype

5.25 Continuous type photography

5.251 Camera techniques

5.26 Mechanical (relief)

5.261 Varigraph

TEXT: Dennis and Jenkins, COMPREHENSIVE GRAPHIC ARTS, Howard W. Sams & Co., Inc., Indianapolis, Indiana, 1974. Chapter 4.

REFERENCES: Cogoli, John, PHOTO OFFSET FUNDAMENTALS, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1974. Chapter 5.

Karch, Randolph, PRINTING AND THE ALLIED TRADES, Pitman Printing Co., New York, New York, 1962. Chapter 11 & 12.

Karch, Randolph, GRAPHIC ARTS PROCEDURES, American Technical Society, Chicago, Illinois, 1970. Chapters 4 & 5.

UNIT NO. V	SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
5.00	IMAGE GENERATION THE STUDENT WILL BE ABLE TO:	
5.10	A. Compare the differences of image generation through the use of hot vs cold type.	A1. Produce a sample of printing using the relief process. Example: cut letter out of potato. A2. Produce a sample of printing using cold type. Example: letters cut out of magazine, photograph, typed page.
5.20	A. Choose the cold type most appropriate for a graphic project.	A1. Using cold type composition, the student will produce a set of layout up through a mechanical. Example: notebook cover (can be sketch used in design).
	B. Choose the proper camera and film in order to properly expose black and white film.	B1. Expose one roll of black and white film.

UNIT VI

6.00 PREPRODUCTION 10 Days

OBJECTIVE: At the end of this unit, the student will be able to produce a product of the six elements in preproduction.

UNIT OUTLINE

6.10 Material

6.11 Inks

6.111 Properties

6.12 Paper

6.121 Surface

6.122 Texture

6.123 Rag content

6.124 Finishes

6.125 Weights

6.20 Process

6.21 Proofreading

6.211 Symbols

6.22 Film types

6.221 Ortho film

6.2211 Chemicals

6.2212 Lighting

6.2213 Development

6.222 Panchromatic

6.2221 Chemicals

6.2222 Lighting

6.2223 Development

6.23 Stripping

6.231 Equipment

6.2311 Light table

6.2312 Exacto knives

6.2313 Golden rod

6.2314 Litho type

6.232 Care of flat

6.24 Plate making

6.241 Plate

6.242 Exposing unit

6.243 Development

6.244 Care of plate

6.30 Equipment

6.31 Process Camera

6.311 Focussing

6.312 Enlarging

6.313 Reducing

6.314 Loading camera

6.315 Exposing negative

6.316 Processing negative

6.317 Care of negative

TEXT: Jenkins & Dennis, COMPREHENSIVE GRAPHIC ARTS, 1st Ed., Howard W. Sams, Inaidanapolis, Indiana, 1974. Chapters 5, 6, 7, 10, 11, 12, 13, 16, 17, 19, & 20.

REFERENCES: Broekhulzen, Richard J., GRAPHIC COMMUNICATIONS, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1973. Chapters 5, 6, 9, & 10.

Cogoli, John, PHOTO OFFSET FUNDAMENTALS, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1973. Chapters 6, 7, 8, 9, 11, 12, 13, 14, 15, 16, 18, & 19.

Karch, Randolph, PRINTING AND THE ALLIED TRADES, Pitman Printing Co., New York, New York, 1962. Chapters 17, 18, & 20.

Karch, Randolph, GRAPHIC ARTS PROCEDURES, American Technical Society, Chicago, Illinois, 1970. Chapter 12.

UNIT NO. VI	SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
6.00	PREPRODUCTION THE STUDENT WILL BE ABLE TO:	
6.10	A. Demonstrate a basic understanding of ink and paper as used in the graphics industry.	A1. Produce a set of ink color patches to demonstrate mixing inks. Example: light to dark.
6.20	A. Identify the materials, process and equipment used in graphic arts photography.	A1. Produce an ortho photograph of line copy. Example: notebook cover (can be sketch used in design).
	B. Speak the language of the graphics industry.	B1. Develop a roll of black and white film. Example: refer to teacher aid at end of unit.
6.30	A. Demonstrate the interrelationahip between stripping, plate burning, and offset press operation.	A1. Strip a flat. Example: notebook cover. A2. Burn a plate. Example: notebook cover.

6.4

INFORMATION SHEET ON INKS

PURPOSE

The purpose of this information sheet is to provide basic information concerning inks used in the Printing Industry. Ben would like to provide your with some general information about printers inks and paper that will help you as you work in Graphic Communications/Graphic Arts. Ben found this information in the U. S. Air Force Career Development Course in duplication.

The exact date and place of the origin of printers ink is not known. The beginning of the modern inks is considered to be writing ink. The Chinese and Egyptians used writing ink as early as 2600 B. C. These early inks were made of lamp black mixed with animal or vegetable oils. Later, earth colors were added to make colored ink.

Early printers were forced to make their own ink. It was always made according to their own formula but primarily it was made of boiled linseed oil and lamp black. The ingredients were mixed together and then ground by hand or with a mortar and pestle.

Commercial inkmaking was first introduced in Europe in the 16th Century. The first ink factory in America was established in 1742. The early inks were of very poor quality.

Ink is made for all types of presses. Each ink used for a particular press or process has to be designed for that press or process. Basically, all inks have three main parts which are: 1. vehicle, 2. the pigment, and 3. the drier.

The main portion of the ink is a liquid that carries the pigment. This liquid is called the vehicle. It may be boiled linseed oil, tung oil, or a synthetic oil. The primary difference between the liquids is the way they dry.

The pigment is the color part of the ink. Carbon Black is generally used as the pigment in making black ink. Pigments for colored inks are generally made form mineral or organic dyes.

It dries in two basic ways--by evaporation into the atmosphere and by absorption into the printed material. Ink manufacturers add a substance to their ink to accelerate its drying.

Recommended Reading Reference Relating to Paper and Inks

1. Extension Course Institute, (Duplication Specialist), United States Airforce Air Training Command, Keesler AFB Mississippi, Volume 1, 1971.

2. Ervin A. Dennis, John D. Jenkins (Comprehensive Graphic Arts, Indianapolis, Howard W. Sams, First Ed.), 1974.

UNIT VII

7.00 PRODUCTION 25 Days

OBJECTIVE: At the end of this unit, the student will be able to develop an understanding and the ability to perform the six forms of production.

UNIT OUTLINE

7.10 Relief

7.11 Letterpress

7.111 Preparation of press

7.1111 Oiling the plate

7.1112 Checking grippers

7.1113 Prepare packaging

7.1114 Position of guidepins

7.1115 Making overlay

7.1116 Inking the press

7.1117 Trial run

7.1118 Adjustment

7.1119 Final run

7.1120 Clean up

7.20 Stencil

7.21 Paper

7.211 Equipment

7.22 Handcut

7.221 Equipment

7.2211 Film

7.2212 Exacto knife

7.2213 Block out

7.2214 Screen

7.2215 Cord

7.2216 Frame

7.2217 Blotter

7.2218 Squeegee

7.222 Process

7.2221 Position film on screen

7.2222 Blockout

7.2223 Remove acetate

7.2224 Register paper

7.2225 Make trial run

7.2226 Adjust

7.2227 Final run

7.2228 Clean up

7.23 Photographic

7.231 Equipment

7.2311 Camera

7.2312 Ortho film

7.2313 Chemicals

7.2314 Screen

7.2315 Exposing unit

7.2316 Ink

7.232 Process

7.2321 See Information Sheet

7.30 Intaglio

7.31 Intaglio Process

7.311 Process

7.312 Types of Intaglio Methods

7.32 Intaglio image carriers

7.33 Intaglio press

7.40 Offset

7.41 Offset process

7.411 Theory

7.412 Process

7.42 Offset press

7.421 Six main systems of an offset press

7.422 Basic components of an offset press

7.423 Types of offset presses

7.43 Press operations

7.431 Placing plate on the press

7.432 Setting guides for paper

7.433 Setting delivery and rolls

7.434 Mix fountain solution

7.435 Wet plate

7.436 Turn on water

7.437 Turn on ink rollers

7.438 Make trial run and adjustments

7.439 Press wash-up

7.50 Continuous Tone Photograph

7.51 Black and white

7.511 Contact printing

7.5111 Equipment

7.5112 Chemicals

7.51121 See information sheet

7.512 Enlarging

7.5121 Equipment

7.5122 Materials

7.5123 Chemicals

7.51231 See information sheet

7.52 Color

7.521 Equipment

7.522 Chemicals

7.523 Materials

7.5231 See information sheet

7.60 Electro-static

TEXT: Jenkins & Dennis, COMPREHENSIVE GRAPHIC ARTS, 1st Ed., Howard W. Sams, Indianapolis, Indiana, 1974. Chapters 71, 83, & 84; Units 5 & 43.

REFERENCES: Broekhuizen, Richard J., GRAPHIC COMMUNICATIONS, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1973. Chapters 6 & 14--18; Units 20--25 & 34.

Cogoli, John, PHOTO OFFSET FUNDAMENTALS, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1973. Chapters 8--10.

Hauenstein and Bachmeyer, WORLD OF COMMUNICATION VISUAL MEDIA, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1974. Chapters 25--27.

Turnbull, Arthur T. and Baird, Russell N., THE GRAPHICS OF COMMUNICATION, Holt, Rinehart and Winston, Inc., New York, New York, 1968. Chapters 3, 5, 6, & 7.

UNIT NO. VII	SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
7.00	PRODUCTION THE STUDENT WILL BE ABLE TO:	
7.10	A. Demonstrate proper use of the relief printing process.	A1. Construct a chart showing the history of relief type.
7.20	A. Demonstrate proper use of and produce copy using the stencil process.	A1. Produce samples of paper and handcut silkscreen stencil projects. Example: notebook cover (can follow sketch in design).
7.30	A. Demonstrate proper use of the gravure	A1. Bring in sample of a gravure printed product. Example: money, wallpaper.
7.40	A. Demonstrate proper use of and produce using the planographic process.	A1. Produce a sample of an offset project. Example: note book cover (can follow sketch in design).
7.50	A. Demonstrate proper use of and samples of continuous tone photographs.	A1. Print a roll of black and white film. Example: refer to instructors aid at end of unit.
7.60	A. Demonstrate proper use of the electro-static printing process.	A1. Bring a sample of printing for electro-static systems Example: numbers on a check blank.

7.4

TAKING "GOOD" PICTURES

1. Have a strong center of interest.
   A. Main subject.
   B. Secondary subject.
   C. Avoid putting center of interest in the center of picture.
      1. This looks static and uninteresting.
      2. Place center of interest in a third of the picture.
      3. Always divide your picture into thirds - both vertically and horizontally.

2. Know the angles.
   A. Walk around the subject to secure the best shooting angle.
   B. Shooting from a low angle provides an uncluttered sky background.
   C. In bad weather, shoot from high angles. Skies look bleak and unappealing.
   D. Horizontal lines - keep in lower third of picture.
      1. This looks spacious.
      2. Clouds look neat.

3. Move in Close.
   A. Never move backwards.
   B. Eliminate everything that does not add to the picture.
   C. Take close ups to convey a feeling of intimacy and long shots for airness and depth.

4. Use of leading lines.
   A. Leading lines are shadows or roads that enter your picture.
   B. Lines should always lead into the picture; never out.

5. Watch the background.
   A. Background sets the mood for the picture.
   B. Obstacles out of a persons head like telephone poles should be avoided.
   C. Blue sky is good.
   D. Look beyond your subject; your camera will.

6. Add interest to your scenic shots.
   A. People should be in the foreground.
   B. Should be 20 to 25 feet away from the camera.
   C. Should look away from the camera.
   D. Foilage or overhanging trees in the foreground make for a nice setting.

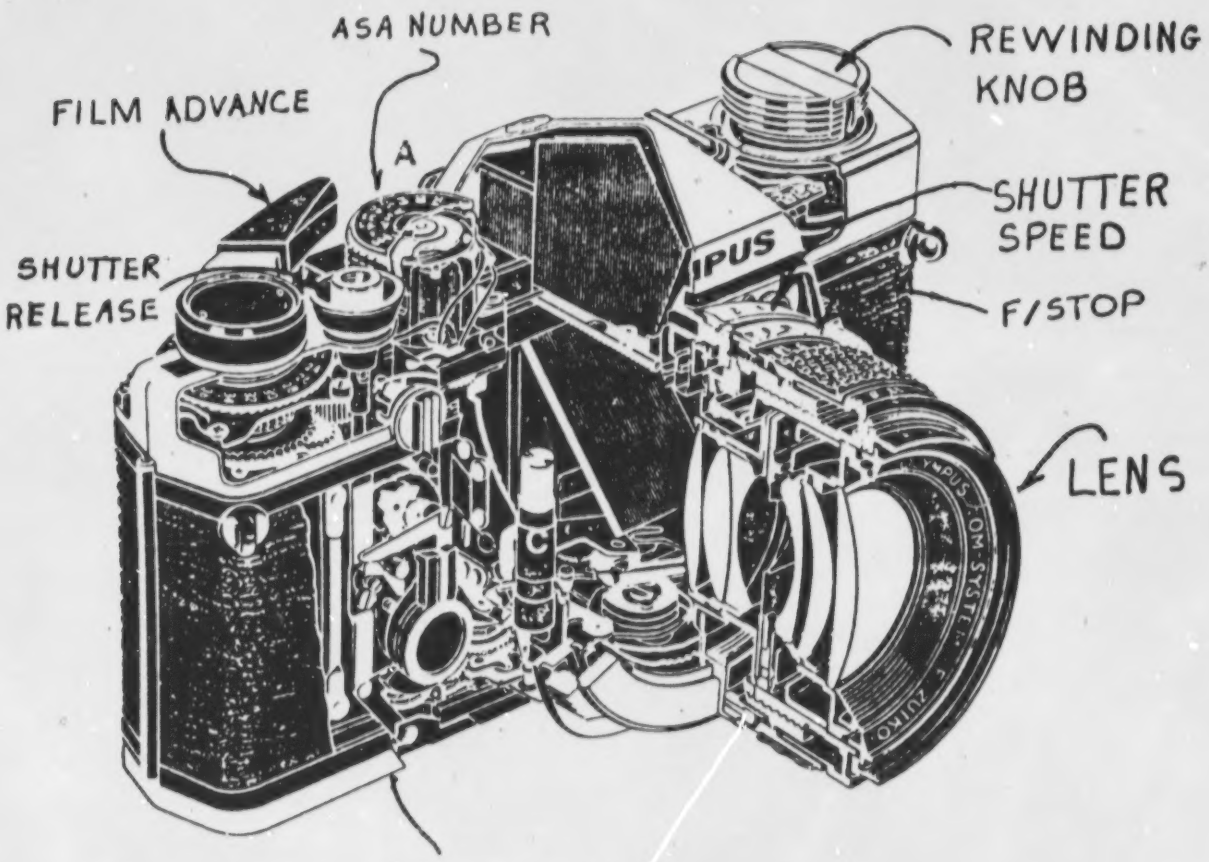
7. Showing Detail.
   A. Best way is to move in close.
   B. Use no background or foreground.
   C. The movement is the primary object.

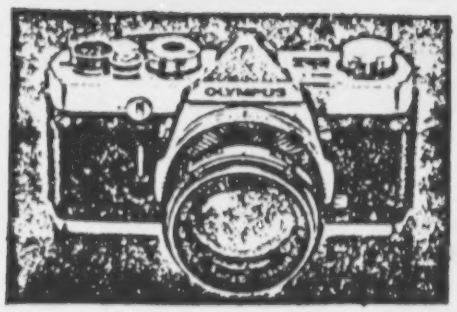
8. Lighting.
   A. Always have the sun come over your right shoulder.
   B. Avoid shadows unless desired in the picture.
   C. Find proper angle where highlights enter on subject.

FILM

FILM IS SILVER BROMIDE IN A TRANSPARENT GELATIN! THIS IS CALLED EMULSION, AND IT IS SPREAD ON A PLASTIC BASE FOR SUPPORT! THE BIGGER THE PIECES OF SILVER BROMIDE, THE MORE SENSITIVE THE FILM IS TO LIGHT..! BELIEVE IT OR NOT..... COMPARED TO ALL THE COSTS INVOLVED IN PHOTOGRAPHY, THE CHEAPEST IS THE FILM!

INFORMATION SHEET ON PARTS OF A TYPICAL 35 MM CAMERA





DEVELOPING FILM

1. Film loaded in tank - total darkness.

UNDER NORMAL LIGHT, THE FOLLOWING FUNCTIONS CAN BE PERFORMED.

2. Locate developer to be used, stop bath, fixer, photo flow and squeegee.
3. Pour 8 ounces (35MM and 126 MM), 12 ounces (620 and 120) of desired developer into a graduate.
4. Take temperature of the developer.
5. Locate guide number for film being used.
6. Put temperature of developer opposite guide number of film and read the development time in minutes at the bottom of scale.
7. Set time for computed time on timer.
8. At the same time, pour developer into tank and turn on timer.
9. Develop for desired time.
10. While waiting for developing to terminate, pour 8 ounces of stop bath into graduate.
11. When development time is completed, immediately pour developer out and pour stop bath into tank. This should be done as quickly as possible.
12. Leave stop bath in tank for 3 - 5 minutes.
13. Pour out stop bath.
14. Pour 8 ounces of fixer into tank.
15. Leave fixer in tank for 7 - 10 minutes. Do not leave longer than 10 minutes because stains may result.
16. Pour out fixer.
17. Wash film in film washer under 68 degree water for 10 - 15 minutes. Temperature is very impoartant.
18. Pour 8 ounces of photo flow in tank and swirl reel in photo flow for 2 minutes.
19. Remove film and squeegee.
20. Hang film in dryer for 5 minutes until dry.

REMEMBER, developer, stop bath, fixer and photo flow are reusable if not diluted with water or other chemicals. Replace them into their proper containers. Wash funnels off after being used with a particular chemical before using on another chemical. Cleanliness is very important in the darkroom and it is your responsibility to see that the darkroom is kept in order.

Developer - brings latent image visible.
Stop Bath - stops chemical action of the developer.
Fixer - Hardens unexposed areas and clears exposed areas.
Wash - cleans film from chemicals left on film and washes dirt away.
Photo Flow - wetting agent, helps eliminate water spots.

CONTACT PRINTING

Contact printing is a process by which a light source travels through the negative, placing a latent image on the contact paper.

Conditions: Contact printing is accomplished under yellow (O. C.) conditions.

Procedure:
1. Open contact printer.
2. Place paper emulsion side up.
3. Place negative, emulsion side down on top of paper. (Emulsion to emulsion)
4. Close contact printer.
5. Expose for desired time by use of an enlarger
6. Remove paper from contact printer.
7. Develop in Dektol (1 part Dektol to Two (2) parts water) by the inspection method. When desired contrast is achieved, remove from the developer.
8. Place in Stop Bath for thirty (30) seconds.
9. Place in fixer for five to ten minutes depending on the paper used.
10. Place in wash for 10 - 20 minutes.
11. Place print in print dryer until dry.
12. From your contacts, determine which prints can be enlarged.

ENLARGING

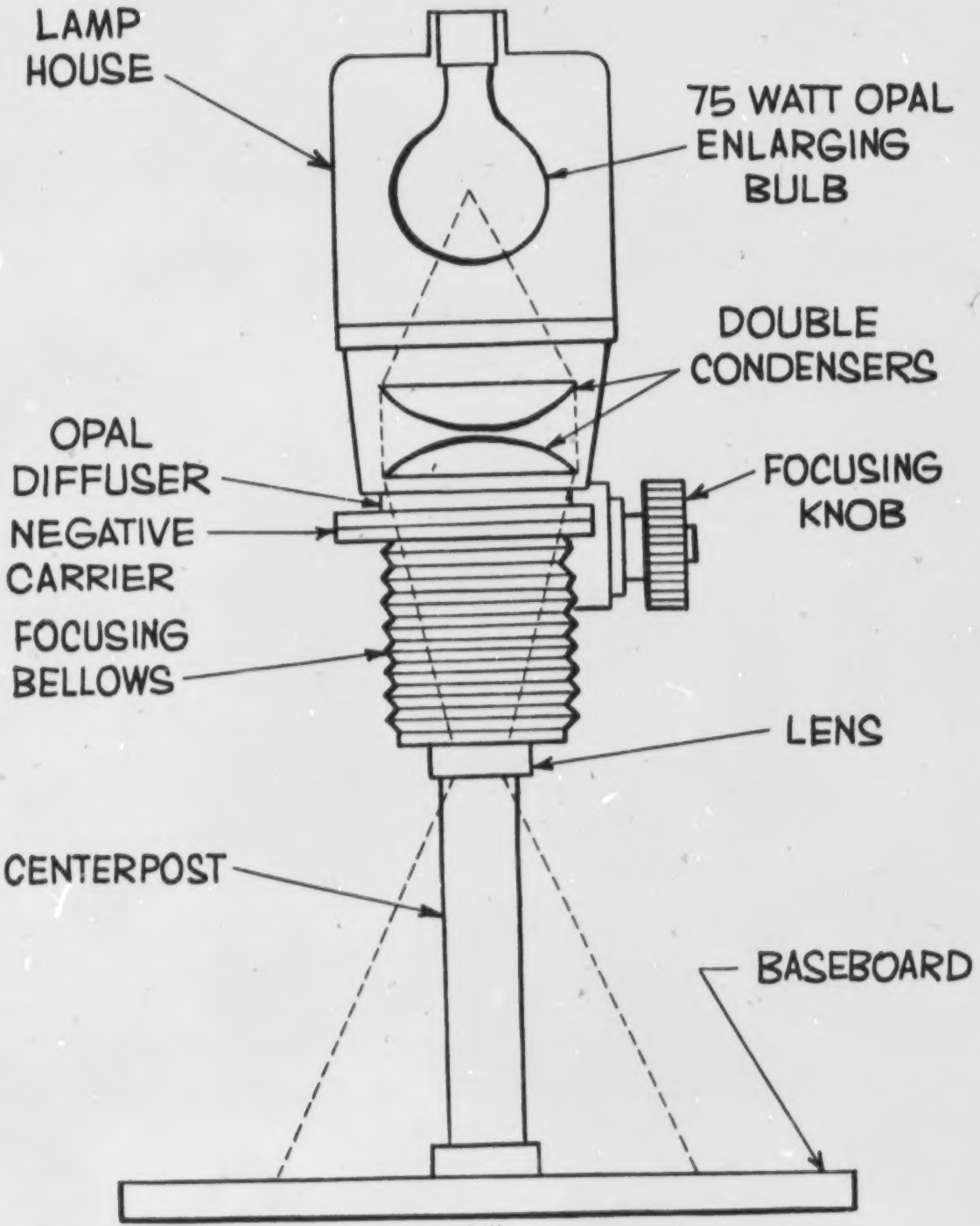
Enlarging is a process by which a light source is passed through a negative, and through elevation of the negative, enlargment of the photo is accomplished.

Conditions: Enlarging is accomplished under yellow light (O. C.) conditions.

Procedure:

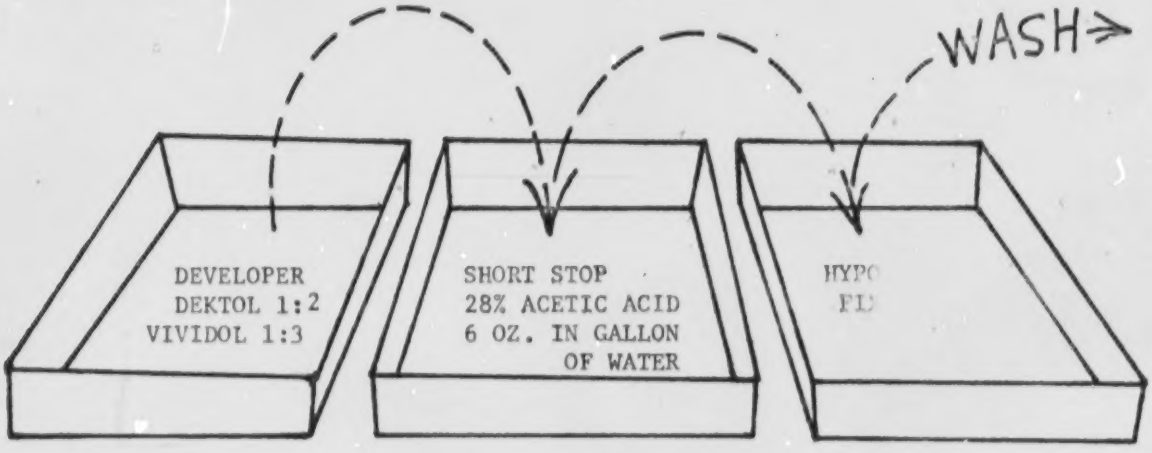
1. Select negative to be printed.
2. Place negative in film holder with emulsion side pointing downward.
3. Place film holder in enlarger.
4. Turn on enlarger and open lens to its widest opening.
5. Set easel to the desired print size.
6. Either raise or lower enlarger by means of the crank to achieve the size photo desired on the easel.
7. Focus negative by means of focus knob on the easel.
8. Turn lens opening two (2) stops down to reduce light intensity.
9. Turn off enlarger.
10. Select polycontrast filter that corresponds to the density of your negative. Place filter in holder.
11. Select enlarging paper the proper size and place in easel.
12. Place developing guide on top of enlarging paper in an area that portrays different densities.
13. Set timer for one minute.
14. Expose for one minute.
15. Develop enlarging paper in Dektol (1 part Dektol to two (2) parts water for two (2) minutes.
16. Place print in stop bath for thirty seconds.
17. Place print in fixer for five or ten minutes.
18. When the print is in the fixer, house lights can be turned on. Inspect the developer scale for the desired contrast. Remember, all prints must have Jet Blacks, Paper Base Whites and range of middle tones. Select the exposure time that assumes all of the characteristics of a good print and expose enlarging paper for the chosen time. Repeat developing steps again as mentioned above.
19. Place print in water for ten to twenty minutes depending on the paper used.
20. OPTIONAL: Place print in Pakosol for three minutes.
21. Place print in dryer until dry.

A TYPICAL ENLARGER



PRINTS HOW THEY ARE DEVELOPED!

1. Clean negative with camel hair brush, static master, or run between two fingers to get off dust and hairs!
2. Put negative in negative carrier! Shiny-side up..... that's emulsion to emulsion...and up-side-down!
3. Turn on enlarger light and open lens to its brightest!
4. Move lamphouse up or down for desired print size!
5. Focus with focusing knob until picture is sharp!
6. Stop the lens down two clicks...or stops!
7. Turn off enlarger!
8. Put sheet of enlarging paper in easel...emulsion to emulsion... (shiny-side up).
9. Turn enlarger back on for about 10 seconds as a starting point, or use test exposure sheet!
10. Slide exposed paper into developing tray, face down, pushing center and corners down with prongs to get out trapped air bubbles! ROCK TRAY!



DETERMINATION OF NEGATIVE DENSITIES

It is hoped that you will become good photographers and printers. Making good prints is especially important. In addition to showing you what makes a good print, there are a few rules to memorize. They will be on all tests and you will need to know them every time you print.

1. There must be a jet black in your picture.

2. There must be a paper base white in your picture.

3. There must NOT be any washed out areas in the highlights - all highlights except specular highlights must have detail.

4. Do NOT develop your prints less than one and a half minutes. If you do, you will not get a true black.

5. There must be a full range of gray tones in your picture. We will go over actual negative to explain what negatives goes on what grade of paper, but you must be fully familiar with the following:

   A. A thin, flat negative with very Little contrast requires Grade No. 5 paper, or in extreme cases, No. 6. If you develop and expose correctly you should not need these paper grades.

   B. A fairly thin, flat negative with lots of detail requires a No. 4 paper. This negative would be underdeveloped and or underexposed.

   C. A properly exposed and developed negative would require a No. 2 or No. 3 paper, depending on original subject contrast. The lower contrast subject would require the No. 3 paper.

   D. An overexposed, overdeveloped negative with excessive contrasts and dense highlights would require a No. 1 grade of paper.

DRY MOUNTING

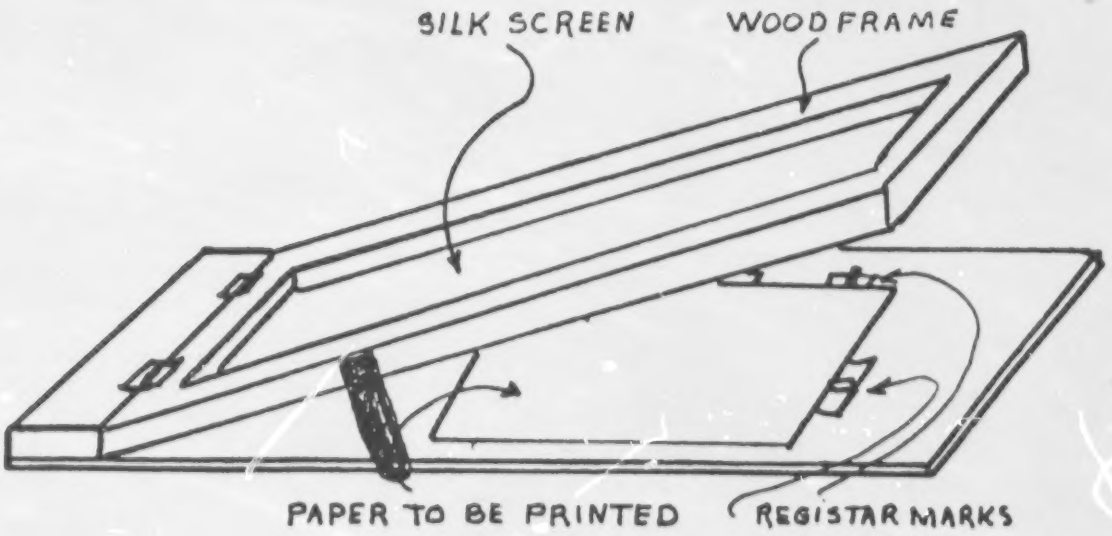
Dry mounting is the process of adhering a picture to mounting board, fabric or wood by the use of heat, pressure, and a special waxed filament paper or mounting tissue.

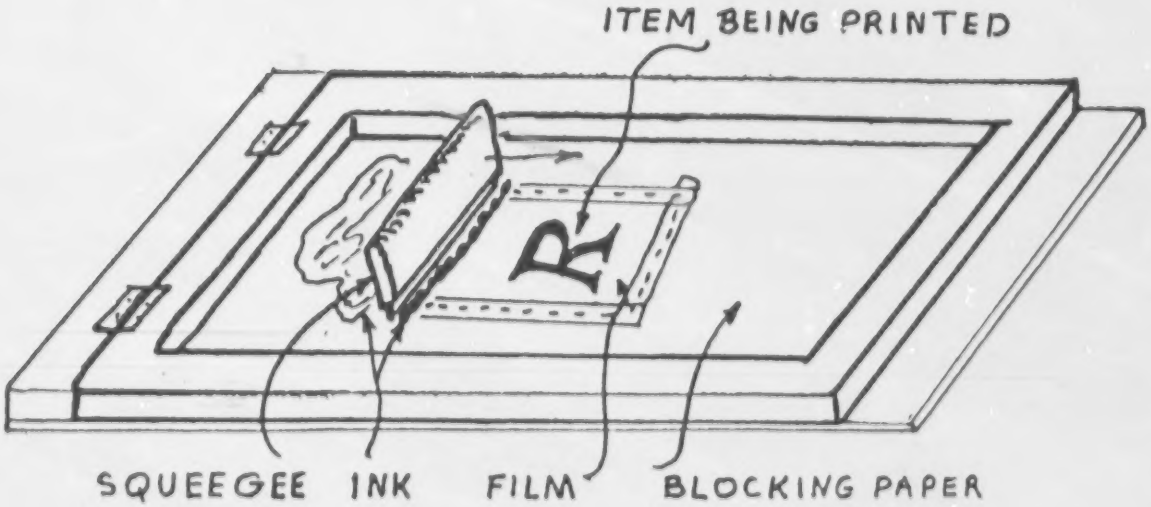
Procedure:

1. Turn on dry mount press by means of a toggle switch on the left rear side of the press.
2. Set temperature to 225 degrees F.
3. Turn tacking iron on to the medium position.
4. Wait 15 minutes for the press to warm up.
5. Select the proper size of mounting tissue. You may have to cut the mounting tissue to size. Place it on the back side of your print. Adhere the mounting tissue to the center of the print by the use of the tacking iron.
6. Trim all four sides of the print with the paper cutter.
7. Select desired color and size of mounting board to be used. A trim color may or may not be selected at this point.
8. Determine location of print on mounting board.
9. Lift a corner of the print upwards, leaving the mounting tissue laying flat against the mounting board. Taking the tacking iron, adhere the tissue to the mounting board. Make sure the corner is securely adhered. Do the same to all four corners. The print will now stay in place on the mounting board.
10. Place the board with print adhered to it in the press with the print facing upwards. Place a sheet of Silicon Release Paper on top of the print. This will cause the print not to stick to the heated platen. DO NOT FORGET THE SILICON RELEASE PAPER.
11. Pull down the handle of the mounting press and leave it in the downward position for:
    a. Polycontrast Single Weight - 6 to 15 seconds.
    b. Polycontrast R. C. - 1 to 2 seconds.
        1. If upon completion of hold down time, the print appears to be lifting, put it in the press for a few more seconds.
12. The board will have a tendency to curl. Hold it the opposite direction until the board cools.
13. Run a magic marker on the edges of the mounting board to achieve a uniform color.
14. Print that is mounted is now ready for display.

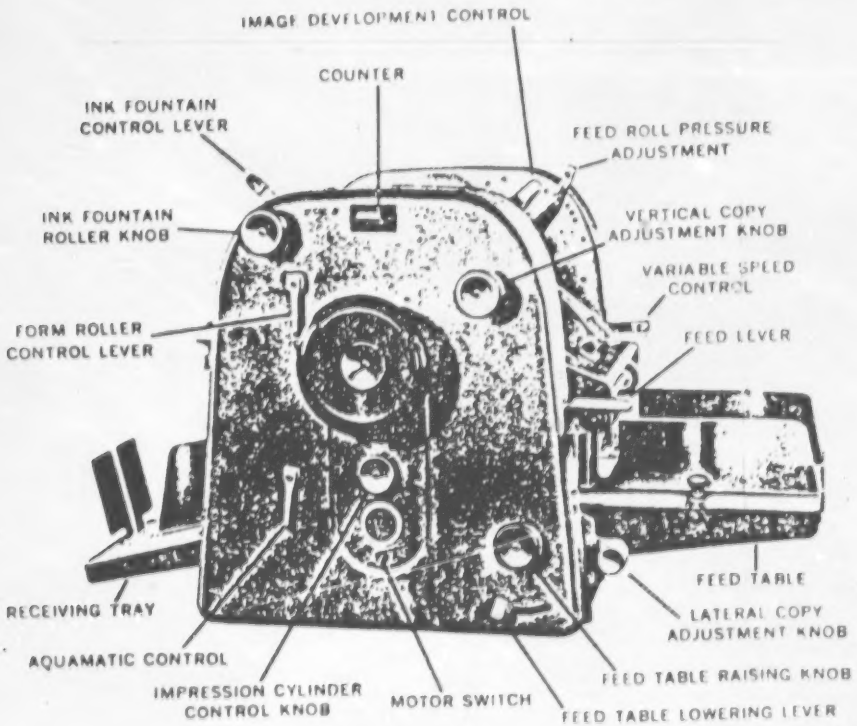
INFORMATION SHEET ON SCREEN PRINTING

A TYPICAL SCREEN

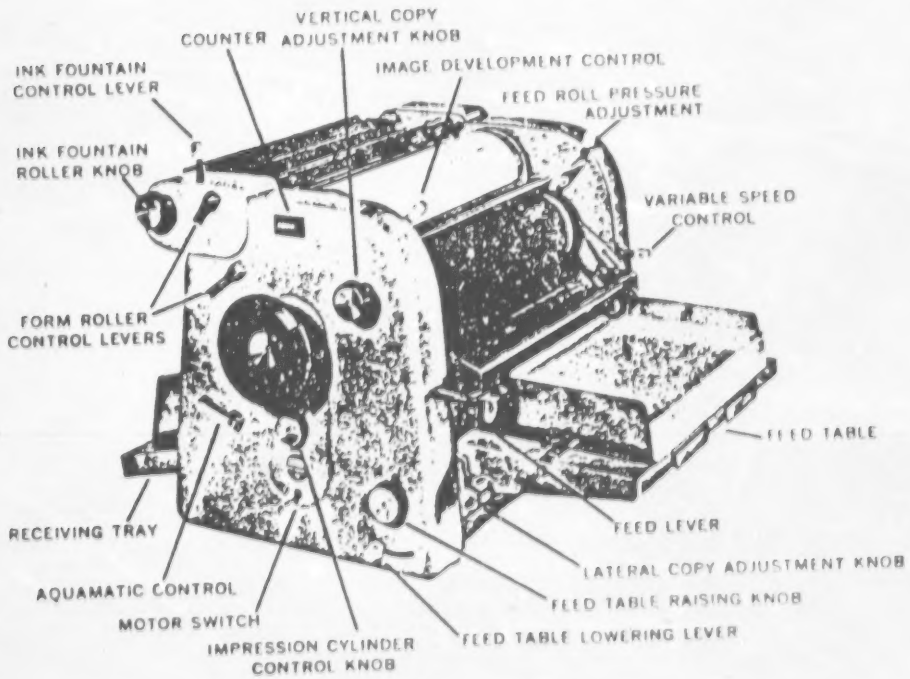




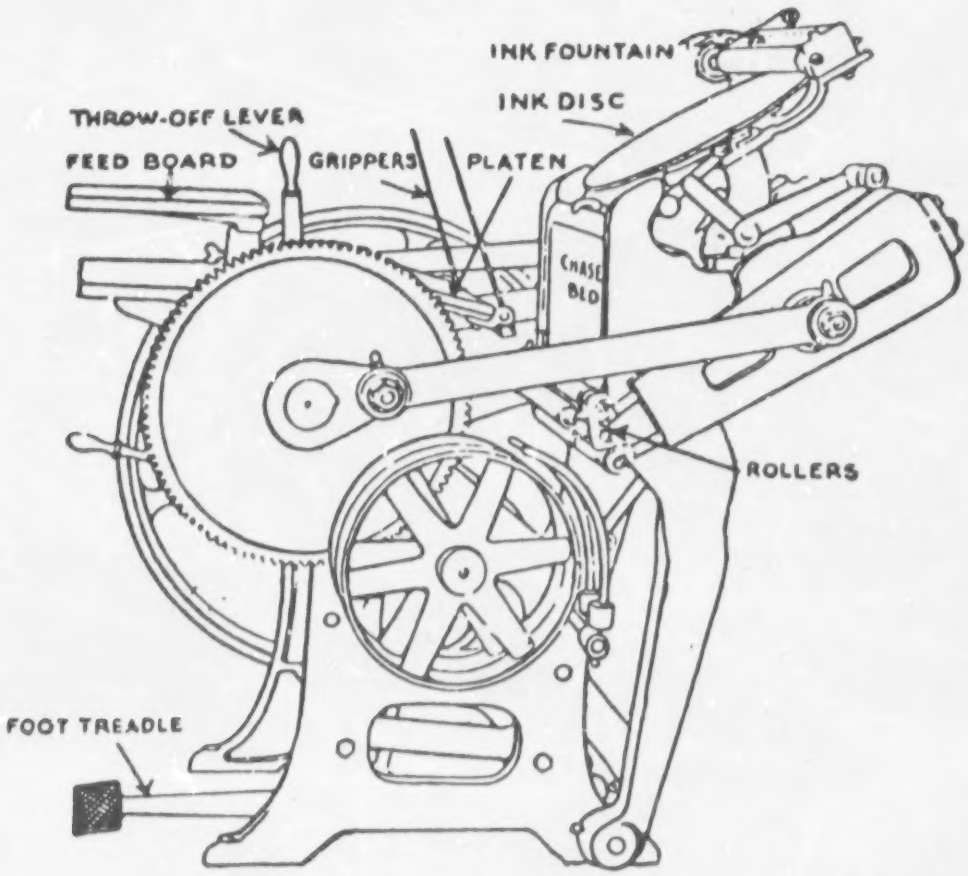
INFORMATION SHEET ON THE A.B. DICK MODEL #320 OFFSET PRESS



MODEL 321



ILLUSTRATED INFORMATION SHEET ON PLATEN PRESSES



UNIT VIII

8.00 BINDERY 5 Days

OBJECTIVE: At the end of this unit, the student will have the basic information and experience in binding procedures which will give the student an understanding of the finishing and distribution process of graphic arts.

UNIT OUTLINE

8.10 Binding

- 8.11 Folding
- 8.12 Cutting
  - 8.212 Calculation
  - 8.122 Parts of a paper cutter
- 8.13 Drilling
- 8.14 Gathering
- 8.15 Methods
  - 8.151 Saddle-wire stitch
  - 8.152 Side-wire stitch
  - 8.153 Sewn soft cover
  - 8.154 Binding post
  - 8.155 Ring binder
  - 8.156 Plastic cylinder
  - 8.157 Spiral wire
  - 8.158 Perfect adhesive binding

8.20 Finishing Packaging and Distribution

- 8.22 Finishing a book
- 8.22 Packaging

8.221 Mail magazine packaging

8.222 Automatic label applicator

8.23 From bindery to customer

TEXT: Jenkins & Dennis, COMPREHENSIVE GRAPHIC ARTS, 1st Ed., Howard W. Sams, Indianapolis, Indiana, 1974. Section 18, Units 152--158.

REFERENCES: Broekhuizen, Richard J., GRAPHIC COMMUNICATIONS, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1973.

Karch, Randolph, GRAPHIC ARTS PROCEDURES, American Technical Society, Chicago, Illinois, 1970. Chapter 12

UNIT NO. VIII	SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
8.00	BINDERY THE STUDENT WILL BE ABLE TO:	
8.10	A. Demonstrate a knowledge of how to choose the most efficient methods of binding and a variety of graphic materials.	A1. Flat and saddle stitch a booklet. A2. Construct a pad using a perfect binding method. A3. Produce a booklet using a plastic ring binder. Example: contain all information relating to graphic communications.

UNIT IX

9.00 CAREERS 5 Days

OBJECTIVE: At the end of this unit, the student will be able to develop a career awareness of the opportunities in the Graphic Communications Industry.

UNIT OUTLINE

9.10 Classification

9.11 Classifications

9.111 Management

9.112 Labor

9.1121 Design

9.1122 Sales

9.1123 Research and development

9.1124 Service personnel

9.1125 Technical personnel

9.20 Career Opportunities in the Industry

9.21 Preparation

9.22 Economics

9.23 The future

TEXT: Jenkins & Dennis, COMPREHENSIVE GRAPHIC ARTS, 1st Ed., Howard W. Sams, Indianapolis, Indiana, 1974. Units 182—188.

RESOURCES: Broekhuizen, Richard, GRAPHIC COMMUNICATIONS, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1973.

Hauenstein and Bachmeyer, WORLD OF COMMUNICATION VISUAL MEDIA, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1974.

Miller, Wilber R., Maddox, Marion E., and Smith, Lavon B., EXPLORING CAREERS IN INDUSTRY, McKnight & McKnight Publishing Co., Bloomington, Illinois.

UNIT NO. IX	SELECTED STUDENT COMPETENCIES	SAMPLE LEARNING ACTIVITIES
9.00	CAREERS THE STUDENT WILL BE ABLE TO:	
9.10	A. Identify and classify occupations in the Graphic Communications Industry.	A1. Give a special interest report on some Facet of a career in graphic arts. Example: photography, newspaper.
9.20	A. Assess abilities and interests as they relate to careers in Graphic Communications Technology.	A1. Example: guest lecturer, field trips.
	B. Discuss and interpret the responsibilities of those necessary to the design and production of an industrial product.	B1. Example: refer to Occupational Outlook Handbook, H. E. W.

RESOURCES

GRAPHIC COMMUNICATIONS

APPENDIX A

BIBLIOGRAPHY

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Brown, Walter C., Drafting for Industry, The Goodheart Wilcox Co., Inc., Homewood, Illinois, 1974.

Cogoli, John, Photo Offset Fundamentals, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1973.

French, Thomas E. and Svensen, Carl L., Mechanical Drawing, Webster Division, McGraw-Hill Book Company, New York, N. Y., 1963.

Fuglsby, Glen O., McGee, R. A. and Sturtevant, W. W., General Mechanical Drawing, The Bruce Publishing Company, Milwaukee, WI, 1963.

Graphic Communications Curriculum Guide, Idaho State Board for Vocational Education.

Graphic Communications (unpublished thesis), Robert Moore, Ben Franklin Junior High, Fargo, ND, 1976.

Hauenstien, A. Dean and Bachmayer, Steven A., The World of Communications Visual Media, McKnight & McKnight Publishing Co., Bloomington, Illinois, 1974.

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Occupational Outlook Handbook, Bureau of Labor Statistics, Department of H. E. W., Washington, DC.

Photography Guide (unpublished written report), Dean L. Serr, Magic City Campus, Minot, ND, 1976.

Polk, Ralph W. and Edwin, The practice of Printing, Chas. A. Bennet Co., Inc., Peoria, Illinois, 1964.

Turnbull, Arthur T. and Baird, Russell N., The Graphics of Communication, Holt, Rinehart and Winston, Inc., New York, NY, 1968.

Walker, John R., Exploring Drafting, The Goodheart Wilcox Co., Inc., Homewood, Illinois, 1972.

APPENDIX B

GRAPHIC COMMUNICATIONS

VISUAL AIDS SOURCES

FILMSTRIPS

COVERING RUBBER PRINTING ROLLERS, TT-84
MGD Graphic Systems Group

DEVELOPING ROLL FILM
McGraw-Hill
New York, NY

GRAPHIC COMMUNICATIONS & PHOTO OFFSET FUNDAMENTALS, 396
McKnight & McKnight Publishing Co.

HOW TO DEVELOP A NEGATIVE
Audio Visual Distribution Department
Eastman Kodak

HOW TO MAKE A CONTACT PRINT
Audio Visual Distribution Department
Eastman Kodak

IDEAS WON'T KEEP
Audio Visual Distribution Department
Eastman Kodak

OFFSET PRESS PLATEMAKING, TT-70
MGD Graphic Systems Group

PHOTOGRAPHY IS
Audio Visual Distribution Department
Eastman Kodak

PROPERTIES OF LITHOGRAPHIC INKS, TT-72
MGD Graphic Systems

SILK SCREEN PROCESS IN GRAPHIC ARTS
Universal Education and Visual Arts

TECHNIQUES OF MODERN OFFSET
A. B. Dick
5900 West Toohy Avenue
Chicago, Illinois 60648

TODAY'S COMMERCIAL DESIGN
CBIE Slide Series
Kansas State Plan

TOPOGRAPHY TODAY, 1973, sound
International Typographic Composition Association

VISUAL COMMUNICATIONS
CBIE Slide Series
Kansas State Plan

WONDERFUL WORLD OF TYPOGRAPHY, sound
International Typographic Composition Association

WORLDS WITHIN WORLDS
Audio Visual Distribution Department
Eastman Kodak

16 MM FILMS

BASIC PRINCIPLES OF PRINTING, 1965, 23 Min.
Miehle Division

WE USE TO CALL IT PRINTING, 27 Min.
Dupont de Nemours and Co. Inc., EI

SLIDES

BEGINNING OF PHOTOGRAPHIC COMPOSITION, 1974
Eastman Kodak

FILMS FOR ADJUSTABLE CAMERAS (0030), 1970
Eastman Kodak

FILMS FOR SNAPSHOT CAMERAS (0028), 1970
Eastman Kodak

GRAPHICS, ELEMENTS, PRINCIPLES
CBIE Slide Series
Kansas State Plan

LET'S MAKE AN ENLARGEMENT (0080), 1961
Eastman Kodak

PROCESSING BLACK & WHITE FILM (0079), 1971
Eastman Kodak

OTHER AUDIO VISUAL RESOURCES

FILMSTRIPS:

McGraw Hill Book Co.	Scales Sectional views Auxiliary views & related construction Isometric drawing Freehand lettering Developments Orthographic drawing Parts 1 & 2 Dimensioning Parts 1 & 2 Bowcompases Intersections
Learning Arts P. O. Box Wichita, KS 67201	Drafting & blueprint reading Drafting techniques Mechanical drawing filmstrip or super 8
Double Day Multimedia P. O. Box 11607 Santa Anna, CA 92705	Drafting series I and II Architectural Drafting
H. Wilson Corp. 555 West Taft Drive South Holland, Il 60473	Wilson educational recordings communications

TRANSPARANCIES:

Learning Aids P. O. Box 917 Wichita, KS 67201	Mechanical drawing Technical drawing and design
Visual Products Division 3M Center St. Paul, MN 55101	
DCA Educational Products 424 Valley Road Warrington, PA 18976	

APPENDIX C

GRAPHIC COMMUNICATIONS

OTHER RESOURCES

PERIODICALS

BUSINESS GRAPHICS
7373 N. Lincoln Avenue
Chicago, IL 60646

DUPONT MAGAZINE
Wilmington, DE 19898

ENGINEERING GRAPHICS
Keuffel & Esser
1012 Slight Boulevard
Orlando, FL 32806

KODAK BULLETIN FOR THE GRAPHIC ARTS
Kodak Publications for the Graphic Arts
Eastman Kodak Company
Rochester, NY 14650

SCHOOL SHOP
Box 623
416 Longshore Drive
Ann Arbor, MI 48107

SHOP TALK
C. E. Stimpson Co., Inc.
101 Pleasant Street
Worcester, MA 01601

PUBLISHER'S WEEKLY
Samuel Bingham Publishing Co.
1180 Avenue of the Americas
New York, NY 10036

GRAPHIC ARTS PRODUCTS NEWS
6725 Sunset Boulevard
Los Angeles, CA 90028

INDUSTRIAL PHOTOGRAPHY
United Business Publications
200 Madison Avenue
New York, NY 10016

IC-PLANT PRINTER
United Business Publications
Box 2303
Philadelphia, PA 19101

PRINTING IMPRESSIONS
Box 8161
Philadelphia, PA 19101

PRINTING PRODUCTION
Penton Building
Cleveland, OH 44113

REPRODUCTION METHODS
Box 14217
Annex Station
Cincinnati, OH 45214

VISUAL COMMUNICATION INSTRUCTOR
Syndicate Magazines
25 West 45th Street
New York, NY 10036

SOURCES FOR INSTRUCTION EQUIPMENT

EASTMAN KODAK COMPANY
Rochester, NY 15650

PITSCO
P. O. Box 26
Pittsburg, KS 66762

THE KELSEY CO.
P. O. Box 941
Mariden, CT 06450

AMERICAN TYPE FOUNDERS
Whitensville, MA 01588

JENSEN TOOLS & ALLOYS
4117 North 44th St.
Phoenix, AZ 65018

SUPPLIES

HAMMERMILL PAPER COMPANY
Erie, Pennsylvania
Papers, Design

MEAD PAPER CORPORATION
Chillicothe, Ohio
Papers

KIMBERLY-CLARK CORPORATION
Neenah, Wisconsin
General Information

MOHAWK PAPER MILLS, INC.
Cohoes, New York 12047
Paper, Duocone Printing

NEKOOSA-EDWARDS PAPER CO.
Port Edwards, Wisconsin
Paper, inks

NEW YORK AND PENNSYLVANIA PAPER CO.
Johnsonburg, PA
Papers

NU-ARC COMPANY, INC.
Schools Division
4110 West Grand Avenue
Chicago, Illinois 60651
General Information

FILMS - FILMSTRIPS

CURRICULUM FILMS, INC.
10031 Commerce Ave.
Tujana, CA

ENCYCLOPEDIA BRITANNICA FILMS, INC.
Wilnette, IL

P. N. GALTFELLER CO.
Spring Grove, PA

CRUMBACHER FILM LIBRARY
460 West 34th St.
New York, NY 10001

ULANO CO.
610 Dean Street
Brooklyn, NY 11238
Screen Printing

VAN SON HOLLAND INK CORP. OF AMERICA
Union and Liberty Streets
Mineola, NY 11501
Inks

WEST VIRGINIA PULP AND PAPER CO.
Luke, Maryland
Papers

ADVANCE PROCESS SUPPLY CO.
400 N. Noble St.
Chicago, IL 60622

ULANO
210 East 86th St.
New York, NY 10028

THE KELSEY CO.
P. O. Box 26
Pittsburg, KS 66762

MCKILLIGAN INDUSTRIAL SUPPLY CORP.
494 Chenango St.
Binghanton, NY 13901

INTERNATIONAL PAPER CO.
200 East 42nd St.
New York, NY 10017

NATIONAL ASSOCIATION OF MANUFACTURERS
2 East 47th St.
New York, NY 10017

ULANO PRODUCTS COMPANY
210 East 86th Street
New York, NY 10028

TEXTBOOKS AND REFERENCE BOOKS

DELMAR CATALOG
Delmar Publishers, Inc.
Mountainview Avenue
Albany, NY 12250

INDUSTRIAL EDUCATION BOOKS
Charles A. Bennett Co., Inc.
809 Derweiller Drive
Peoria, IL

INDUSTRIAL EDUCATION TEXTS & RELATED MATERIALS FOR JR. & SR. H. S.
Webster Division McGraw-Hill Book Co.
Manchester Road
Manchester, MO 63011

OUTSTANDING TEXTS
Goodheart-Willcox Company
18250 Harwood Avenue
Homewood, IL 60430

TECHNICAL AND INDUSTRIAL EDUCATION BOOKS AND TEXT-WORKBOOKS
Prakken Publications, Inc.
416 Longshore Drive
Ann Arbor, MI 48107

MCKNIGHT PUBLISHING CO.
Bloomington, IL 61701

PICA FOUNDATION
P. O. Box 4487
Charlotte, NC 28204

THE BRUCE PUBLISHING COMPANY
400 North Broadway
Milwaukee, WI 53201

AMERICAN TECHNICAL SOCIETY
848 East 58th Street
Chicago, IL 60637

TAPLINGER PUBLISHING COMPANY, INC.
119 West 57th Street
New York, NY 10019

THE AMERICAN PHOTOGRAPHIC BOOK PUBLISHING CO., INC.
Amphoto
Garden City, NY 11530

MORGAN & LESTER
New York, NY

FAIRCHILD DAVIDSON
5004 Jerico Turnpike
Comack, NY 11725

HOWARD W. SAMS & CO., INC.
4300 West 62nd St.
Indianapolis, IN 46206

EQUIPMENT

GRAPHICS RESEARCH INC.
11480 Rockfield Court
Cincinnati, OH 45241

GESTEINER CORP.
Yonkers, NY 10703

MARTIN YALE BUSINESS MACHINES
500 N. Spaulding Ave.
Chicago, IL 60624

PITSCO
P. O. Box 26
Pittsburg, KS 66762

EASTMAN KODAK COMPANY
343 State Street
Rochester, NY 14650

C.A. PRATT CO.
1108 West Chicago Avenue
East Chicago, IN 46312

HAMILTON MANUFACTURING COMPANY
Two Rivers, WI 54221

H.B. ROUSE AND COMPANY
2214 North Wayne Avenue
Chicago, IL 60614

ADVANCE PROCESS SUPPLY CO.
400 N. Noble St.
Chicago, IL 60622

NATIONAL CAMERA, INC.
2000 W. Union Ave.
Englewood, CO 80110

BROWN MANUFACTURING COMPANY
2000 Dempster Street
Evanston, IL 60204

CHALLENGE MACHINERY COMPANY
1433 Fulton Street
Grand Haven, MI 40417

MARTIN DRISCOL AND COMPANY
777 North Merrimac Avenue
Miles, IL 60648

NUARC COMPANY
4100 West Grand Avenue
Chicago, IL 60651

ULANO PRODUCTS COMPANY
210 East 86th Street
New York, NY 10028

FREE AND INEXPENSIVE INSTRUCTIONAL MATERIALS

AIDS FOR TEACHING VISUAL COMMUNICATIONS
Consumer Markets Division
Eastman Kodak Company
Rochester, NY

GRAFLEX AUDIO VISUAL DIGEST
Graflex, Inc.
Rochester, NY

KODAK AV PROGRAMS FOR PROFESSIONAL, COMMERCIAL & INDUSTRIAL USE
Eastman Kodak Company
Professional, Commercial and
Industrial Markets Division
Rochester, NY 14650

KODAK SCHOOL AND CLUB SERVICES
Audio-Visual Service
Sales Service Division
Eastman Kodak Company
Rochester, NY 14650

CHALLENGE MACHINERY CO.
Grand Have, MI 40417

MARTIN DRISCOL & CO.
777 No. Merrimac Ave.
Niles, IL 60648

NEW YORK TIMES
220 West 43rd St.
New York, NY 10036

NUARC CO.
4110 West Grand Ave.
Chicago, IL 60650

JACK L. POPIN CO.
262 Mott St.
New York, NY 10012

G.A. PRATT CO.
1108 W. Chicago Ave.
East Chicago, IL

H.B. ROUSE & COMPANY
2214 N. Wayne Ave.
Chicago, Illinois

INTERNATIONAL GRAPHIC ARTS EDUCATION ASSOCIATION
1411 K. Street N. W.
Washington, D. C. 20005

TRANSPARENCIES

CHARLES BESELER COMPANY
219 South 18th Street
East Orange, NJ 07018

DCA EDUCATIONAL PRODUCTS, INC.
4865 Stenton Avenue
Philadelphia, PA 19144

JAM HANDY ORGANIZATION
2821 East Grand Boulevard
Detroit, MI 48211

3M COMPANY
Visual Products
Box 3100
St. Paul, MN 55101

UNITED TRANSPARENCIES, INC.
Box 888
Binghamton, NY 13902

PAMPHLETS

KODAK BULLETIN FOR THE GRAPHIC ARTS
Kodak Publications for the Graphic Arts
Eastman Kodak Company
Rochester, NY 14650

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Superintendent of Documents
Washington, DC

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1433 Fulton Street
Grand Have, MI 49417

BASIC CRAFTS CO.
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New York, NY 10010